

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) ~~A composite~~ An acetabular liner component, comprising:

a ceramic insert portion having an inner surface and an outer surface; and

a biocompatible thermoplastic backing portion molded onto the outer surface of the ceramic insert portion when the biocompatible thermoplastic backing portion is in a substantially softened state;

a groove ~~defined by~~ formed in an outer surface of said biocompatible thermoplastic backing ~~member portion~~ adapted to receive an inter-connection member;

wherein the outer surface of the ceramic insert portion is provided with a micro-roughness having an arithmetical mean roughness in the range of about 5 to about 10 microns and a plurality of ~~radially~~ longitudinally disposed macro-grooves so as to increase the mechanical bonding between the biocompatible thermoplastic backing portion and the outer surface of the ceramic ~~liner~~ insert portion.

2. (Currently Amended) The composite acetabular liner component according to Claim 1, wherein the ceramic insert ~~member portion~~ portion has a substantially hemispherical shape.

3. (Currently Amended) The composite acetabular liner component according to Claim 1, wherein the outer surface of the ceramic insert portion comprises a roughened surface.

4. (Cancelled)

5. (Currently Amended) The composite acetabular liner component according to Claim 3, wherein the roughened surface has a ten-point mean roughness in the range of about 50 to about 75 microns.

6. (Cancelled)

7. (Cancelled)

8. (Currently Amended) The composite acetabular liner component according to Claim 1, wherein the biocompatible thermoplastic backing ~~member~~ portion has a substantially hemispherical surface, and wherein the macro-grooves are longitudinally oriented with respect to the hemispherical shape.

9. (Currently Amended) The composite acetabular liner component according to Claim 1, wherein the biocompatible thermoplastic backing ~~member~~ portion is comprised of polyethylene.

10. (Currently Amended) The composite acetabular liner component according to Claim 1, wherein the biocompatible thermoplastic backing ~~member~~ portion is comprised of ultra high molecular weight polyethylene.

11. (Currently Amended) A composite acetabular liner component, comprising:

a ceramic insert member, the ceramic insert member having a substantially hemispherical shape, the ceramic insert member having an inner surface and an outer surface; and

a biocompatible thermoplastic backing member molded onto the outer surface of the ceramic insert member when the biocompatible thermoplastic backing member is in a substantially softened state, the biocompatible thermoplastic backing member having a substantially hemispherical shape, the biocompatible thermoplastic backing member having an inner surface and an outer surface;

a connection system ~~defined by~~ including a groove formed in the outer surface of said biocompatible thermoplastic backing member adapted to ~~interact with an acetabular component~~ receive a locking member;

wherein the outer surface of the ceramic insert is provided with a roughened texture and a plurality of longitudinal macro-grooves so as to increase the mechanical bonding between the inner surface of the biocompatible thermoplastic backing member and the roughened texture of the outer surface of the ceramic liner member.

12. (Currently Amended) The composite acetabular liner component according to Claim 11, wherein the texture comprises a micro-roughened surface.

13. (Currently Amended) The composite acetabular liner component according to Claim 12, wherein the roughened surface has an arithmetical mean roughness in the range of about 5 to about 10 microns.

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Currently Amended) The composite acetabular liner component according to Claim 11, wherein the biocompatible thermoplastic backing member is comprised of polyethylene which substantially penetrates into the textured macro-grooves.

18. (Previously Presented) The composite acetabular liner component according to Claim 11, wherein the biocompatible thermoplastic backing member is comprised of ultra high molecular weight polyethylene, and wherein the macro-grooves are substantially radially positioned on the outer surface of the ceramic insert.

19. (Currently Amended) An acetabulum replacement system, comprising:

an acetabulum member operable to be positioned in an acetabulum;

a composite acetabular liner component, comprising:

a ceramic insert member having an inner surface and an outer surface; and

a biocompatible thermoplastic backing member molded onto the outer surface of the ceramic insert member when the biocompatible thermoplastic backing member is in a substantially softened state;

wherein the outer surface of the ceramic insert is provided with micro-roughness and a plurality of ~~radially~~ longitudinally positioned macro-grooves so as to increase the mechanical bonding between the biocompatible thermoplastic backing member and the outer surface of the ceramic liner member; and

a securing member operable to interconnect the acetabulum member and the composite acetabular liner component by fitting interaction with a structure in an outer surface of the biocompatible thermoplastic backing member.

20. (Currently Amended) A hip replacement system, comprising:

an acetabulum member;

a composite acetabular component, comprising:

a ceramic insert member having an inner surface and an outer surface; and

a biocompatible thermoplastic backing member molded onto the outer surface of the ceramic insert member when the biocompatible thermoplastic backing member is in a substantially softened state;

wherein the outer surface of the ceramic insert is provided with micro-roughness and a plurality of longitudinally oriented macro-grooves so as to increase the mechanical bonding between the biocompatible thermoplastic backing member and the outer surface of the ceramic liner member;

a femoral component having a ball-shaped portion adapted to be received in the composite acetabular component; and

a securing member interconnecting the acetabulum member and the composite acetabular component by engaging an outer surface of the biocompatible thermoplastic backing member.

21. (Currently Amended) A method of making a composite acetabular component, comprising:

providing a ceramic insert member having an inner surface and an outer surface;

providing a biocompatible thermoplastic material;

imparting micro-roughness and a plurality of radially disposed and longitudinally oriented macro-grooves to the outer surface of the ceramic insert member;

softening the biocompatible thermoplastic material;

contacting the outer surface of the ceramic insert member with the softened biocompatible thermoplastic material for a sufficient period of time to form a biocompatible thermoplastic backing member onto the outer surface of the ceramic insert member; and

interconnecting the composite acetabular component with an acetabulum implant with an interconnecting member by fitting the interconnecting member in a structure in an outer surface of the biocompatible thermoplastic backing member;

wherein the micro-roughness and a plurality of radially disposed and longitudinally oriented macro-grooves of the outer surface of the ceramic insert member increases the mechanical bonding between the biocompatible thermoplastic backing member and the outer surface of the ceramic liner member.

22. (Previously Presented) The method according to Claim 21, wherein the ceramic insert member has a substantially hemispherical shape.

23. (Cancelled)

24. (Previously Presented) The method according to Claim 21, wherein the micro-roughness of the outer surface has an arithmetical mean roughness in the range of about 5 to about 10 microns.

25. (Previously Presented) The method according to Claim 21, wherein the micro-roughness of the outer surface has a ten-point mean roughness in the range of about 50 to about 75 microns.

26. (Cancelled)

27. (Cancelled)

28. (Previously Presented) The method according to Claim 21, wherein the biocompatible thermoplastic backing member has a substantially hemispherical shape.

29. (Previously Presented) The method according to Claim 21, wherein the biocompatible thermoplastic backing member is comprised of polyethylene.

30. (Previously Presented) The method according to Claim 21, wherein the biocompatible thermoplastic backing member is comprised of ultra high molecular weight polyethylene.

31. (Previously Presented) The acetabulum replacement system of claim 19, wherein said securing member includes a deflectable ring positionable between said acetabulum member and said composite acetabular component.

32. (Previously Presented) The acetabulum replacement system of claim 31, at least one of said acetabulum member or said composite acetabular component define a groove to interact with at least a portion of said ring.

33. (Previously Presented) The acetabulum replacement system of claim 19, wherein said acetabulum member defines a groove on an inside thereof.

34. (Previously Presented) The acetabulum replacement system of claim 19, wherein said composite acetabular component defines a groove on an exterior thereof.